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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

ROY, SIKHA

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/020,986	Applicant(s) PARK ET AL.	
	Examiner Sikha Roy	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26,28,29,31,32 and 35-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26,28,29,31,32 and 35-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/30/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The Amendment, filed on April 10, 2008 has been entered and acknowledged by the Examiner.

In light of amendment, 35 U.S. C. 112, second paragraph rejection of claims 35,36,38,39,41 and 42 have been withdrawn.

Claims 26, 28, 29, 31, 32 and 35-42 are pending in the instant application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 26, 28, 29, 31,32, 37 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication 2002/0057565 to Seo in view of U.S. Patent 5,811,177 to Shi et al.

Regarding claim 26, Seo discloses (Fig. 1B, 7A, 7B ...) an electroluminescent device comprising a transparent substrate 101b, a plurality of pixel areas including plurality of scanning lines and data lines formed on the substrate, plurality of pixel electrodes 603 formed on the plurality of pixel areas, electroluminescent layer 604 formed over the plurality of pixel electrodes, a metal electrode 605 formed on the electroluminescent layer, a flat seal cover plate 103b for sealing the EL layer and the

Art Unit: 2879

metallic electrode and a sealant 105b for adhering the edge of the flat seal cover plate to the transparent substrate 101b, the sealant having (enclosing) a space for injecting an inactive gas (para [0103]) and having thickness larger than that of the EL layer and the metal electrode for adhering the edge of the flat seal cover plate to the transparent substrate, a moisture absorbing agent 104b formed of fine powder containing any one of BaO, CaO, CaCO₃, silica-gel, alumina is provided at the inside of the seal cover plate opposed to the metal electrode to absorb moisture and oxygen from the electroluminescent layer.

Claim 26 differs from Seo in that Seo does not expressly disclose a heat - exhausting layer formed of metal thin film provided under the flat seal cover plate , the entire surface of the metal thin film contacting the flat seal cover plate.

Shi in relevant art of electroluminescent organic devices discloses (Fig. 4, column 3 lines 40-63) discloses a metal thin film layer 26 (such as aluminum) under the seal cover plate (epoxy encapsulant) 28, wherein the entire surface of the metal plate 26 contacts the seal plate. The use of aluminum for good heat conduction is well known in the art. Shi further discloses this metal film has low permeability of oxygen and moisture and hence yields overall structure with a better encapsulation and resistance to permeation.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to provide a heat-exhausting layer formed of thin metal film under the flat seal cover plate, metal thin film contacting the flat seal cover plate of the device of Seo as taught by Shi et al. for better encapsulation of the device. The recitation of 'the metal

thin film provided under the seal cover plate to transfer heat' has not been given patentable weight because is considered an intended use recitation. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ 2d 1647 (1987). Furthermore it is noted that aluminum being very good conductor of heat, it would transfer the heat from the device.

Regarding claims 28 and 29, Seo (Fig.1B [0063]) as modified by Shi a moisture absorbing agent 104a formed of fine powder containing any one of BaO, CaO, CaCO₃, silica-gel, alumina is provided at the inside of the heat-exhausting layer of seal cover plate opposed to the metal electrode to absorb moisture and oxygen from the electroluminescent layer. It is further disclosed (Fig.1A) a supporting film 106a formed from semi-transmitting film is used for supporting the moisture absorbing agent to the inner side of the heat-exhausting layer.

Regarding claim 31 Seo discloses (Fig. 1B, 7A, 7B ...) an electroluminescent device comprising a transparent substrate 101b, a plurality of pixel areas including plurality of scanning lines and data lines formed on the substrate, plurality of pixel electrodes 603 formed on the plurality of pixel areas, electroluminescent layer 604 formed over the plurality of pixel electrodes, a metal electrode 605 formed on the electroluminescent layer, a flat seal cover plate 103b for sealing the EL layer and the metallic electrode and a sealant 105b for adhering the edge of the flat seal cover plate

Art Unit: 2879

to the transparent substrate 101b, the sealant having (enclosing) a space for injecting an inactive gas and having thickness larger than that of the EL layer and the metal electrode for adhering the edge of the flat seal cover plate to the transparent substrate, a moisture absorbing agent 104b formed of fine powder containing any one of BaO, CaO, CaCO₃, silica-gel, alumina is provided at the inside of the seal cover plate opposed to the metal electrode to absorb moisture and oxygen from the electroluminescent layer and a semi-transparent film held at the inner side of the flat seal cover plate.

Claim 31 differs from Seo in that Seo does not expressly disclose a heat - exhausting layer formed of metal thin film provided under the flat seal cover plate, the entire surface of the metal thin film contacting the flat seal cover plate.

Shi in relevant art of electroluminescent organic devices discloses (Fig. 4, column 3 lines 40-63) discloses a metal thin film layer 26 (such as aluminum) under the seal cover plate (epoxy encapsulant) 28, wherein the entire surface of the metal plate 26 contacts the seal plate. The use of aluminum for good heat conduction is well known in the art. Shi further discloses this metal film has low permeability of oxygen and moisture and hence yields overall structure with a better encapsulation and resistance to permeation.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to provide a heat-exhausting layer formed of thin metal film under the flat seal cover plate, metal thin film contacting the flat seal cover plate of the device of Seo as taught by Shi et al. for better encapsulation of the device. The recitation of 'the metal

thin film provided under the seal cover plate to transfer heat' has not been given patentable weight because is considered an intended use recitation. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ 2d 1647 (1987). Furthermore it is noted that aluminum being very good conductor of heat, it would transfer the heat from the device.

Seo and Shi disclose the claimed invention except for the metal thin film exposing a portion of the flat seal cover where the moisture-absorbing agent is formed. It would have been an obvious matter of design choice to have the metal thin film adhering to the portion of the seal cover where the moisture-absorbing agent is not formed since the applicant has not disclosed that this design of the thin metal film solves any stated problem and it appears that the invention would perform equally well with the thin metal film covering the entire seal cover plate as disclosed by Shi.

Regarding claim 37 Seo discloses the moisture-absorbing agent is containing any one of BaO, CaO, CaCO₃, silica-gel, alumina.

Claim 32 essentially recites the same limitation as of claim 31 and hence is rejected by Seo and Shi. Seo discloses a sealant for adhering the edge of the flat seal cover plate to the transparent substrate. It would have been obvious to one of ordinary skill in the art at the time of invention to include the metal thin film of Shi adhering to the

Art Unit: 2879

flat portion (only) of the seal cover plate of Seo since it has been held that omission of a part of an element (metal thin film on the sides of seal cover plate) where the remaining portion performs the same function involves only routine skill. Seo and Shi disclose the claimed invention except for the metal thin film adhering to the portion of the flat seal cover exposing the portion of the seal cover plate where the moisture-absorbing agent is formed. It would have been an obvious matter of design choice to have the metal thin film exposing the portion of the seal cover where the moisture-absorbing agent is formed since the applicant has not disclosed that this design of the thin metal film solves any stated problem and it appears that the invention would perform equally well with the thin metal film covering the entire flat portion seal cover plate, including the portion of moisture-absorbing agent as disclosed by Shi and Seo

Regarding claim 40 Seo discloses the moisture-absorbing agent is containing any one of BaO, CaO, CaCO₃, silica-gel, alumina.

Claims 35,36,38,39 and 41,42 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication 2002/0057565 to Seo , U.S. Patent 5,811,177 to Shi et al. and further in view of USPN 6,180,176 to Gledhill et al.

Regarding claim 35, Seo and Shi do not exemplify the heat –exhausting layer formed from a carbon group material.

Gledhill in pertinent art of providing elastomer surfaces on supporting substrates discloses (column 10 lines 9-18) coating of carbon dag or graphite used for heat absorbent properties.

Art Unit: 2879

The selection of known materials for a known purpose is generally considered to be within the skill of the art. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the heat exhaust layer of Shi formed of carbon material for its heat-absorbent properties as disclosed by Gledhill because the selection of known material for a known purpose is within the skill the art.

Regarding claim 36 Gledhill discloses (col. 5 lines 33-35) graphite film is used commercially as heat absorbing material.

Claims 38 and 39 essentially recite the same limitations of claims 35 and 36 respectively and hence are rejected for the same reason.

Claims 41 and 42 essentially recite the same limitations of claims 35 and 36 respectively and hence are rejected for the same reason.

Response to Arguments

Applicant's arguments with respect to claims 26, 31 and 32 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (571) 272-2463. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sikha Roy/
Primary Examiner, Art Unit 2879

Application/Control Number: 10/020,986
Art Unit: 2879

Page 10